

Seq. Listing

Ins B4

## SEQUENCE LISTING

<110> Hermeling, Ronald  
Hoffmann, James  
Narasimhan, Chakravarthy

<120> GLUCAGON-LIKE PEPTIDE-1 CRYSTALS

<130> X-10242

<140> PCT/US98/26480

<141> 1998-12-14

<160> 29

<170> PatentIn version 3.0

<210> 1

<211> 31

<212> PRT

<213> Homo sapiens

<400> 1

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 2

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<220>

<221> VARIANT

<222> (1)..(1)

<223> Xaa at position 1 is L-histidine, D-histidine, desamino-histidine, 2-amino-histidine, beta-hydroxy-histidine, homohistidine, alpha-fluoromethyl-histidine, and alpha-methyl-histidine

<220>

<221> VARIANT

<222> (2)..(2)

<223> Xaa at position 2 is Ala, Gly, Val, Thr, Met, Ile, and alpha-methyl-Ala

<220>

<221> VARIANT

<222> (15)..(15)

<223> Xaa at position 15 is Glu, Gln, Ala, Thr, Ser, and Gly

<220>  
 <221> VARIANT  
 <222> (21)..(21)  
 <223> Xaa at position 21 is Glu, Gln, Ala, Thr, Ser, and Gly

<220>  
 <221> VARIANT  
 <222> (31)..(31)  
 <223> Xaa at position 31 is NH2 and Gly-OH

<400> 2

Xaa Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Xaa Gly  
 1 5 10 15

Gln Ala Ala Lys Xaa Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa  
 20 25 30

<210> 3  
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<220>  
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<220>  
 <221> VARIANT  
 <222> (28)..(28)  
 <223> Xaa at position 28 is Lys or absent

<220>  
 <221> VARIANT  
 <222> (29)..(29)  
 <223> Xaa at position 29 is Gly or absent; and, if Xaa at position 28 is  
 absent, Xaa at position 29 must be absent

<400> 3

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Xaa  
 20 25

<210> 4  
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<220>  
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<222> (1)..(1)  
 <223> Xaa at position 1 is 4-imidazopropionyl, 4-imidazoacetyl, or 4-imidazo-a, a dimethyl-acetyl

<220>  
 <221> VARIANT  
 <222> (20)..(20)  
 <223> Xaa at position 20 is Lys or Arg

<220>  
 <221> VARIANT  
 <222> (31)..(31)  
 <223> Xaa at position 31 is Gly-OH or NH2

<400> 4  
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa  
 20 25 30

<210> 5  
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 <223> synthetic construct

<220>  
 <221> VARIANT  
 <222> (2)..(2)  
 <223> Xaa at position 2 is Val

<400> 5  
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

<210> 6  
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 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic construct

<220>  
 <221> VARIANT  
 <222> (13)..(13)  
 <223> Xaa at position 13 is Glu, Gln, Ala, Thr, Ser or Gly

<220>  
 <221> VARIANT  
 <222> (19)..(19)  
 <223> Xaa at position 19 is Glu, Gln, Ala, Thr, Ser or Gly

<220>  
 <221> VARIANT  
 <222> (29)..(29)  
 <223> Xaa at position 29 is Gly or absent

<400> 6

Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Xaa Gly Gln Ala  
 1 5 10 15

Ala Lys Xaa Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa  
 20 25

<210> 7  
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<220>  
 <221> VARIANT  
 <222> (19)..(19)  
 <223> Xaa at position 19 is Lys or Arg

<220>  
 <221> VARIANT  
 <222> (30)..(30)  
 <223> Xaa at position 30 is Gly or is absent; and Lys at position 27  
 may be acylated

<400> 7

Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln  
 1 5 10 15

Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa  
 20 25 30

<210> 8  
 <211> 28  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic construct

&lt;400&gt; 8

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys  
 20 25

<210> 9  
 <211> 29  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic construct

&lt;400&gt; 9

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly  
 20 25

<210> 10  
 <211> 30  
 <212> PRT  
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<220>  
 <223> synthetic construct

&lt;400&gt; 10

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg  
 20 25 30

<210> 11  
 <211> 31  
 <212> PRT  
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<220>  
 <223> synthetic construct

&lt;400&gt; 11

His Ala Gln Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

<210> 12  
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<213> Artificial

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<223> synthetic construct

<220>

<221> VARIANT

<222> (3)..(3)

<223> Xaa at position 3 is D-Gln

<400> 12

His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 13

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 13

His Ala Glu Gly Thr Phe Thr Ser Asp Thr Ser Lys Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 14

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 14

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Lys Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 15

<211> 30

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

&lt;400&gt; 15

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg  
 20 25 30

&lt;210&gt; 16

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;400&gt; 16

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

&lt;210&gt; 17

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;400&gt; 17

His Val Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

&lt;210&gt; 18

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;400&gt; 18

His Met Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

&lt;210&gt; 19

&lt;211&gt; 31

&lt;212&gt; PRT



<213> Artificial

<220>

<223> synthetic construct

<220>

<221> VARIANT

<222> (3)..(3)

<223> Xaa at position 3 is acetyl-Lys

<400> 19

His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 20

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 20

His Ala Thr Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 21

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<220>

<221> VARIANT

<222> (3)..(3)

<223> Xaa at position 3 is D-Thr

<400> 21

His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 22

<211> 31

<212> PRT  
<213> Artificial

<220>  
<223> synthetic construct

<400> 22

His Ala Asn Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 23  
<211> 31  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic construct

<220>  
<221> VARIANT  
<222> (3)..(3)  
<223> Xaa at position 3 is D-Asn

<400> 23

His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 24  
<211> 31  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic construct

<400> 24

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

<210> 25  
<211> 31  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic construct

&lt;400&gt; 25

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Arg Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

&lt;210&gt; 26

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;400&gt; 26

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Arg Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
20 25 30

&lt;210&gt; 27

&lt;211&gt; 30

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (2)..(2)

&lt;223&gt; Xaa at position 2 is alpha-methyl-Ala

&lt;400&gt; 27

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg  
20 25 30

&lt;210&gt; 28

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic construct

&lt;400&gt; 28

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Gln Gly  
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30

<210> 29  
 <211> 31  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic construct

<400> 29

His Thr Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly  
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly  
 20 25 30